

# *Androcorys pugioniformis* (Lindl. ex Hook.f.) K.Y. Lang (Orchidaceae): New distributional record from Garhwal Himalaya, Western Himalaya, India

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**ABSTRACT:** *Androcorys pugioniformis* (Lindl. ex Hook.f.) K.Y. Lang is a critically endangered terrestrial herb distributed along the Indian Subcontinent. Here we provide a new record of this rare species from Garhwal Himalaya, India.

Orchids are the members of the family Orchidaceae, one of the largest and one of the most ecologically and morphologically diverse families of flowering plants (Dressler, 1993). Orchidaceae includes about 788 genera (Mabberley 1997) and 24,500 species (Dressler 2006), and is the second largest family of flowering plants in the world. The genus *Androcorys* Schltr. was described (Pearce and Cribb 2002) by Rudolf Schlechter (1919) in *Repertorium Specierum Novarum Regni Vegetabilis Beiheft (Orchideologiac Sino-Japonicae Prodromus)*. It is related to the genus *Herminium* R. Br. but the flower has a simple lip and is spurless. The genus comprises only six species distributed in the Indian Himalayas, Nepal, Bhutan, China and Japan (Lang 1996). Duthie (1906) reported occurrence of a rare orchid i.e *Herminium pugioniforme*

Lindl. ex Hook.f. from western Himalayas based on a single collection from the North facing slopes of Srikanta near Dudhu glacier (Bhagirathi Valley in Uttarkashi District) between 4200–4500 m altitude. After a gap of about a century it is rediscovered by Jalal et al. 2007 from Ralam Valley of Pithoragarh District in eastern Uttarakhand State. During a recent survey in Nanda Devi Biosphere Reserve (NDBR) particularly in Ali meadows we came to across a few specimen of this orchid (Figure 1). So far 30 orchid species belonging to 19 genera have been reported from Nanda Devi Biosphere Reserve (Hajra and Balodi 1995, Samant and Joshi 2005).

*Androcorys pugioniformis* (Lindl. ex Hook.f.) K.Y. Lang is terrestrial herb up to 8 cm tall. Tuber globose, 6–10 mm in diam. Stem up to ca. 2.5–5 cm long, erect or ascending,

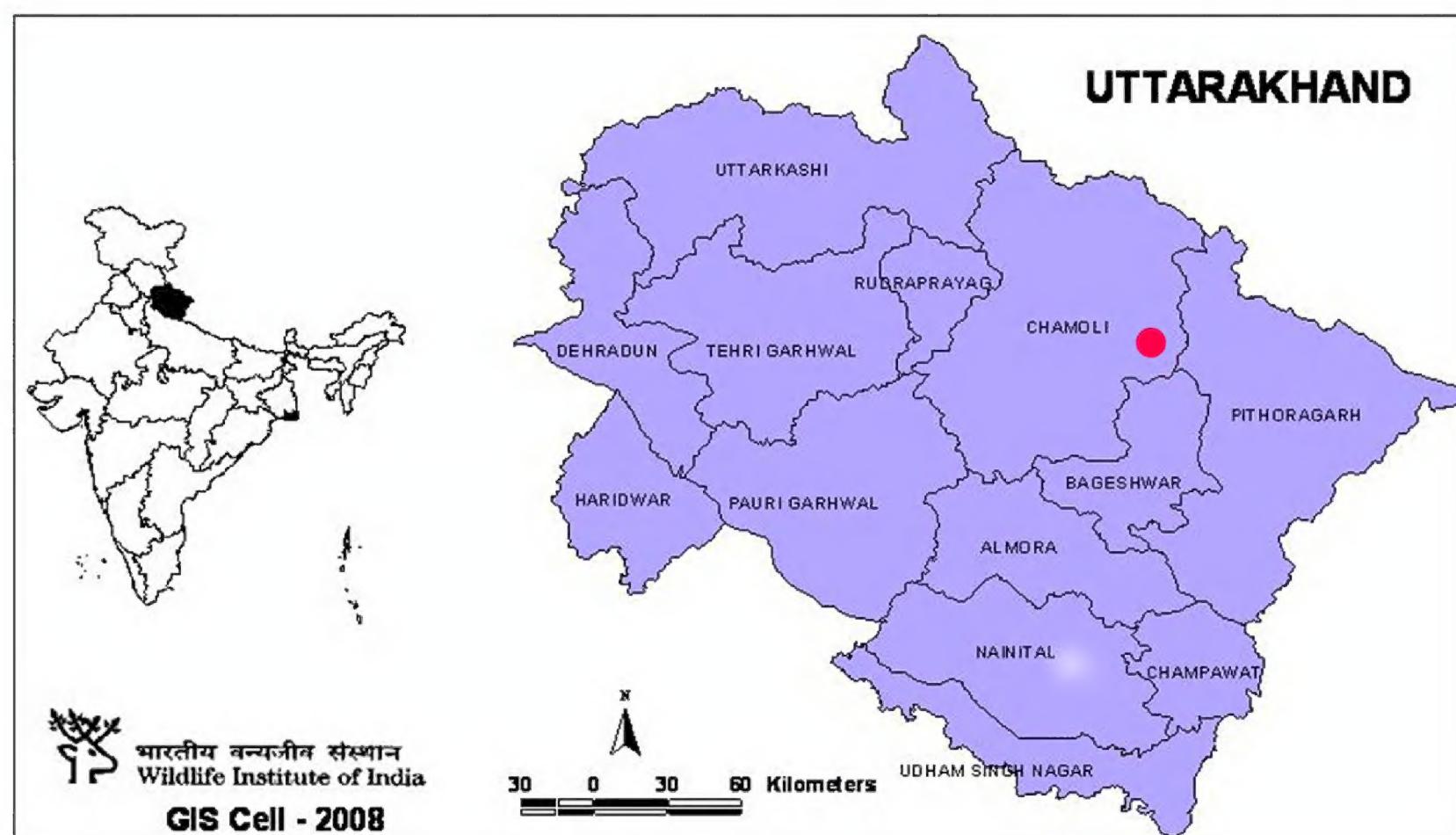


FIGURE 1. Location map of Ali meadows, Uttarakhand, Western Himalaya, India

slender to relatively stout, with 1-2 tubular sheaths and 1- basal leaf. Leaf 2-6 cm long and two and a half times longer than broad, oblong to linear-lanceolate, rounded or subacute at the apex. Inflorescence up to c. 1-5 cm long, laxly flowered, spike, 8-14 flowered. Floral bracts broadly ovate to suborbicular, much shorter than the ovary, c. 0.3-0.5 mm long. Dorsal sepal, 1-veined, ovate, obtuse, green, hooded with the petals, ca. 1-1.1 x 0.4-1.2 mm; lateral sepals, 1- veined, falcately oblong, green, ca. 1.1- 1.4 x 0.5-1.3 mm. Petals, 1- veined, ovate, green, concave, the edges crenulate, ca. 1-1.2 x 0.3-0.5 mm. Lip, fleshy, base dilated and with two oval pits, apex elongate and linear-oblong, ca. 1.2- 1.3 x 0.3-1 mm. Column ca. 0.7 mm tall. Pollinia elliptic, subclavate. Fruit not seen. (Figure 2 and 3).

**Phenology:** flowering in July and August.

**Ecology:** *Androcorys pugioniformis* grows in Alpine meadows between 3600 and 4800 m. Generally prefer to grow in exposed meadows with two or three individuals together in association of *Danthonia cachersiana* Jaub. and Spach grasses, ferns, *Bistorata affinis* (D.Don) Greene and other alpine herbs. This is a very rare species in the Western Himalaya and due to grazing pressures and other biotic activities in its natural habitat this species is in verge of extinction. This species is assessed as Critically Endangered CR B1a;D following IUCN (2001).



FIGURE 2. *Androcorys pugioniformis* (Lindl. ex Hook. f.) K.Y. Lang.

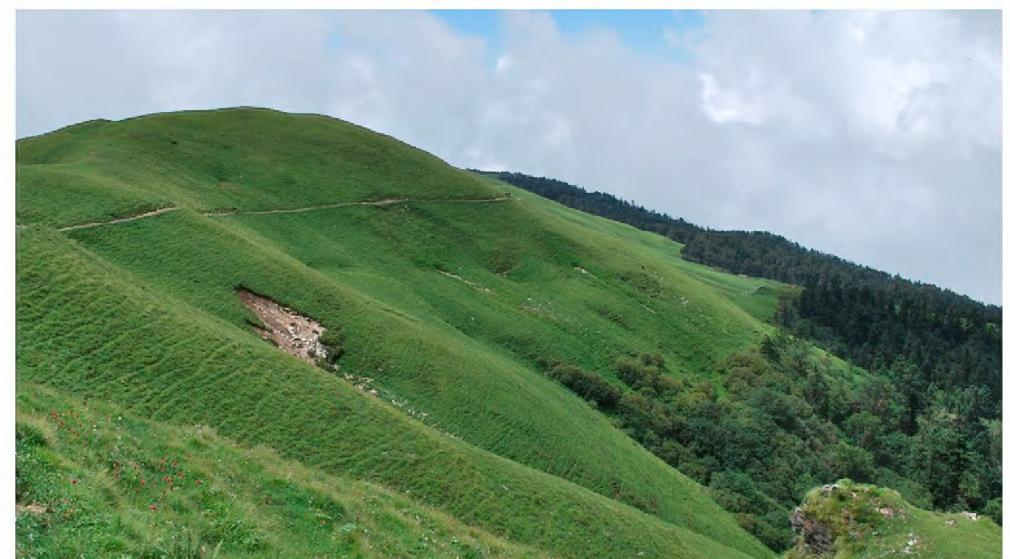


FIGURE 3. Habitat of *Androcorys pugioniformis* in Ali meadows, Uttarakhand, Western Himalaya, India.

**Distribution in Western Himalaya:** Jammu and Kashmir: Khilanmarg, Kolaloi; Himachal Pradesh: Lahul and Spiti District- Rohtang pass; Sirmaur District- Choordhar; Uttarakhand: Pithoragarh District- Barijkang (Ralam valley); Chamoli District: Ali meadows.

**General distribution:** Indian Subcontinent: Western Himalaya (Jammu and Kashmir, Himachal Pradesh, Uttarakhand), East Himalaya (Sikkim, Arunachal Pradesh), Nepal; China (China South-Central, Qinghai, Tibet) (Govaerts et al. 2012).

**Selected specimens examined:** Jalal 13942 and Jalal 15022 (WII); U.C. Bhattacharyya 40492 and M.A. Rau 53637 (BSD); Jagdeep Verma 237 (PAN).

**ACKNOWLEDGMENTS:** The author wish to thank the Department of Science and Technology, Government of India for financial support to carry out this work.

#### LITERATURE CITED

Dressler, R.L. 1993. *Phylogeny and Classification of the Orchid Family*. Cambridge: Cambridge University Press. 314 p.

Dressler, R.L. 2006. How many orchid species? *Selbyana* 26(1-2): 155-158.

Duthie, J.F. 1906. The Orchids of the North-Western Himalaya. *Annals of Royal Botanic Garden Calcutta* 9(2): 81-211.

Govaerts, R., P. Bernet, K. Kratochvil, G. Gerlach, G. Carr, P. Alrich, A.M. Pridgeon, P. Pfahl, M.A. Campacci, D. Holland Baptista, H. Tigges, J. Shaw, P. Cribb, Alex George, K. Kreuz and J. Wood. 2012. *World Checklist of Orchidaceae*. Electronic Database Accessible at <http://www.kew.org/wcsp/monocots/>. Captured on 10 March 2012.

Hajra, P. and B. Balodi. 1995. *Plant Wealth of Nanda Devi Biosphere Reserve*. Flora of India Series No.4. Kolkata: Botanical Survey of India, 441 p.

IUCN. 2001. *IUCN Red List Categories and Criteria: Version 3.1.*, Gland: IUCN Species Survival Commission. 30 p.

Jalal, J.S., G.S. Rawat and Y.P.S. Pangtey. 2007. Rediscovery of a rare orchid *Androcorys pugioniformis* (Lindl. ex Hook. f.) K.Y. Lang - Orchidaceae in Uttarakhand from Kumaon Hills. *Indian Journal of Forestry* 30 (3): 337-338.

Lang, K. 1996. The Genus *Androcorys* Schltr. (Orchidaceae) In China. *Guizhou*. 16(2): 103-108.

Mabberley, D.J. 1997. *The Plant Book, a portable dictionary of the vascular plants*. Cambridge: Cambridge University Press. 507 p.

Pearce, N.R. and P.J. Cribb. 2002. *The Orchids of Bhutan [Flora of Bhutan, 3 (3)]*. Edinburgh: Royal Botanic Garden Edinburgh and Royal Government of Bhutan. 122 p.

Samant S.S. and H.C. Joshi. 2005. Plant diversity and conservation status of Nanda Devi National Park and comparison with highland National Parks of the Indian Himalayan Region. *The International Journal of Biodiversity Science and Management* 1(1): 65-73.

RECEIVED: May 2011

ACCEPTED: May 2012

PUBLISHED ONLINE: June 2012

EDITORIAL RESPONSIBILITY: Wellington Forster